

is meaningless to most of us, but here is how she explained it: "The precipitation hardening in the Wright Flyer's crankcase occurred earlier than the experiments of Wilm in 1909, when such hardening was first discovered, and predates the accepted first aerospace application of precipitation-hardened aluminum in 1910." (See Ms. Goodway's articles listed below.) Historically, the findings add another first for the Wright brothers. Powered flight required a power source. The Wrights knew they needed a metal engine which was strong but lightweight. Unable to use the heavy engines being manufactured for such uses as automobiles, they had an engine custom made at a foundry in Dayton, Ohio. They did not realize that the engine was precipitation-hardened. However, they were the first aviators to use precipitation-hardened aluminum-copper alloy. Today, more than 90 years later, it is a standard for the aerospace industry and is even used to make the space shuttle.

The loan of this museum object to the Smithsonian and their detailed historic and scientific analysis of it has helped both institutions and the public. We now know that the crankcase exhibited at the Wright Brothers National Memorial museum is the crankcase which powered the first flight. The interpretive and museum

staffs know a great deal more about the crankcase than we could ever have imagined. This knowledge adds to our awe and respect for the brothers' tenacity and ingenuity to accomplish what so many had attempted and failed: powered flight.

References

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Jamestown Prepares for Quadricentennial in 2007

Commemorations of historical events often are accompanied by what might be called "anniversary frenzy." Just before the celebration there is a belated outpouring of funds for hurried research and special events, sometimes with positive results and occasionally with results that are less than desired. At Colonial National Historical Park a different approach is being taken at Jamestown, Virginia. The town site already is preparing for the year 2007 to commemorate its founding as the first permanent English settlement in America 400 years ago.

In 1992, 15 years before the Jamestown quadricentennial, the National Park Service entered into a cooperative agreement with the Colonial Williamsburg Foundation and the College of William and Mary. Generally referred to as the Jamestown Archeological Assessment, it is a multi-disciplinary study of Jamestown Island's history, archeological record, and environmental reconstruction, plus a comprehensive survey of historic and prehistoric sites. It was determined from the project's inception that the park museum collection would play an integral role in the assessment.

A solid foundation was established for the assessment five years earlier. In 1987 special funds were provided by the Mid-Atlantic Regional Office to begin cataloging the backlog of more than 500,000 Jamestown artifacts. During subsequent years this commitment was extended when the Washington Office provided funding for the same purpose. By the time the assessment started, more than 50% of the collection was cataloged, and that figure approached 100% before the assessment was concluded. Without this special funding it would have been impossible to locate archival material and artifacts or provide data needed by research teams.

It was the Jamestown archives which provided information for the first major study. Coincidentally, this research started during the same year as the cataloging project, five years prior to the assessment's formal beginning. Historians and historical architects from Colonial Williamsburg joined with an anthropologist from William and Mary to re-examine Jamestown's archeological archives. Included were reports, field books, notes, photographs, maps, and drawings from preceding excavations during the years 1934-

1941 and 1954-1956. The team's objective was to reinterpret these records by incorporating knowledge acquired about Chesapeake sites during the past three decades. When the assessment began in 1992, this architectural survey was well on its way to providing a new understanding of the town's physical layout, the date and function of its buildings, and each structure's appearance.

To complement the architectural study, which continued as part of the assessment, an artifact assessment team was established. This consisted of two material culture specialists with 17th-century expertise who were contracted by Colonial Williamsburg. This team assists members of the architectural survey in interpreting artifact assemblages for structures of particular interest. It also has conducted independent studies of wells at Jamestown, using both the archeologists' records and the artifacts. Cross-mending of ceramics and identification of vessel types manufactured at Jamestown is yet another project.

Archeologists from Colonial Williamsburg used the museum collection and archives for still other purposes. The first excavations at Jamestown in the 1990s were small in scale and were intended to answer specific questions. Many of these questions were raised by the architectural study team regarding architecture and the town's history. Since Jamestown's previous excavators scrupulously left many acres undisturbed, it was possible for archeologists to examine adjacent areas, even in the main townsite. For other inquiries it was beneficial to relocate foundations that were left buried. Prior to making these incisions into the earth, archeologists had staff members examine the archival records of their predecessors. An interesting side-light of these investigations was that they confirmed the accuracy of previous archeologists' reports and drawings.

Jamestown Island comprises over 1,500 acres. An objective of the assessment was to conduct a comprehensive survey to locate all of the island's historic and prehistoric sites. This was accomplished by archeologists from William and Mary who first examined maps in the archives.

Once the survey began, archeologists visited the archives to examine reports, maps, and photographs which corresponded with points under examination. One result of the survey was that it confirmed the belief that there were more Native

American sites at Jamestown than hitherto reported. Consequently, one of the college's anthropology students compared Native American ceramics found in the survey, in earlier excavations at Jamestown, and at three other sites along the James River. The survey was better able to determine the period of Native American occupation at Jamestown, the dominant ceramic type, and which type it resembled elsewhere along the James.

Additional artifact studies have been conducted which provide information for the assessment. Colonial Williamsburg performed acid extraction tests upon roofing tiles from Jamestown and Williamsburg to determine their composition and their relationship to the three 17th-century tile kilns found thus far at both towns. Using GIS (Geographic Information Systems) and the park's ANCS (Automated National Catalog System) records, patterns of artifact distribution have been placed on computerized maps for analysis by Colonial Williamsburg and a consultant. GIS also has been used to study colonial land boundaries. In yet another endeavor, Colonial Williamsburg's archeologists and material culture specialists have guided a graduate student from the Winterthur Museum in a study of tableware.

A bibliographer is using Pro-Cite to list Jamestown's archives and manuscript collections in a guide to both published and unpublished Jamestown source material. This work coincides with that of the assessment's historian who made extensive use of the park's documentary material. These two studies complement each other, with the bibliographer and historian advising one another of sources discovered at other institutions.

Park staff members have used the museum collection as well. Persons who work with the assessment teams have made frequent use of the archives. Visitors likewise have benefitted, thanks to the creativity of the interpretation staff which has set up several temporary exhibits to explain the assessment.

In Jamestown's case, it always has been a misnomer that the bulk of a museum collection rests idly in storage, virtually forgotten until used for rotating exhibits, loans, and researchers. Because of Jamestown's proximity to other colonial sites, the museum collection and archives receive hundreds of researchers and inquiries annually. The archeological assessment merely has increased the collection's usage in the effort to have a more comprehensive understanding of Jamestown by the year 2007.

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A survey of Jamestown Island was complemented by research in the museum collection and archives. NPS photo courtesy Colonial National Historical Park.

